International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531
(Print & Online)

http://gssrr.org/index.php?journal=JournalOfBasicAndApplied

Farmers' Perception on Characteristics of Innovation and the Role of the Partners in the Implementation of Agricultural Extension in Rice Seed Farmer in the Province of Aceh

Setia Budi[a]*, A. Humam Hamid[b], Agussabti[c], Fajri[d]

[a]*Faculty of Agriculture Malikussaleh University – Indonesia*

[b,c,d]*Faculty of Agriculture Syiah Kuala University – Indonesia*

[a]*Email: s.budiunima@gmail.com*

Abstract

Characteristics of innovation and the role of partners in the implementation of agricultural extension were necessary to get the attention in order to empower rice seed farmers in the province of Aceh. The purpose of this study was (1) to know the perception of farmers on innovation characteristic cultivation of rice seed varieties IPB 3S, and (2) to determine the role of the partners in the implementation of agricultural extension to seed farmers. This research used qualitative descriptive approach and Likert Scale. The results showed in a sequence based on the perception of farmers on the cultivation of varieties IPB 3S innovation characteristics (1) have a level of relative advantage, (2) easy to try, (3) the level of compatibility, (4) can be observed, and (5) the level of complexity of innovation. The results also showed that farmers' perception on partners' role in implementing extension in a sequence was given by goverment, university, farmers' institution and private organizations. While the role of the partners in the implementation of agricultural extension sequentially (1) the suitability of extension materials, (2) intensity of extension, (3) the suitability of the method of extension and (4) the accuracy of the use of media.

Keywords: innovation characteristics; farmers' perception; the role of partners; rice seed farmers.

---

* Corresponding author.

1. Introduction

The agricultural sector contributes significantly in development of economic growth in Indonesia. In the future, agricultural development is expected to provide a greater contribution in order to reduce the gap between poor and rich people, to expand employment opportunities and to take advantage of economic opportunities that occur as a result of globalization and liberalization of the world economy.

Essentially, farmers are the main actors of agricultural development. Thus the success of agricultural development is determined more by the role of the farmers themselves which in reality cannot be separated from the guidance and help of the government and various parties.

Besides farmers, according to Mosher [4], one of the basic requirements in agricultural development is the ever-changing technology. Therefore, innovation plays an important role in agricultural development. Diffusion and adoption of innovation in a society of farmers are strongly influenced by the characteristics of the innovation itself. Rogers [8] suggested that there are some characteristics of an innovation, namely: (1) a relative advantage, (2) alignment, (3) the complexity, (4) can be tried, and (5) can be observed.

Another aspect that is important to the agents after the program formed is to prepare the material and methods as well as media outreach selected and used in the implementation of agricultural extension. The achievement of the ultimate goal of education is determined by materials, methods and the precise use of the media by an agent [9].

Kurnia Suci Indraningsih [3] stated that the role of agricultural extension can be felt by the board of farmer groups only. The time was spent more for administrative activities, as well as the target area reaches 3-6 villages for each extension. This condition requires a partnership of agricultural extension with various parties including with universities, to reduce responsibility and synergy between the producer innovation and the entity that will distribute/dissemination of innovations to farmers.

According to Gana Pati Ojha and Stephen R. Morin [6], the partnership will increase the effectiveness of empowerment to the community. The key to successful partnerships is a complementary effort. To achieve the goal, the parties should understand and respect the strengths and weaknesses of each other.

Based on this background, this research aims; (1) to know the perception of farmers on innovation characteristic cultivation of rice seed varieties IPB 3S, and (2) to determine the role of the partners in the implementation of agricultural extension to seed farmers in North Aceh district of Aceh province.

2. Research Methods

This research was conducted in North Aceh regency precisely in Sawang Subdistrict. The population was members of group rice farmer named 'Sapue Pakat' who get agricultural extension partnership program between The Government of North Aceh and university (Bogor Agriculture Institute (IPB) and Syiah Kuala University (Unsyiah). The entire population being sampled in this study was 128 farmers. The scope of research was

limited to see the innovation characteristics of cultivated technology for IPB 3S varieties to seed farmers and the role of the partners in the implementation of agricultural extension services to seed farmers IPB 3S. The object of research was the member of seed farmer group who give an assessment of the characteristics of cultivation technology innovation and the role of partners in the implementation of the extension to seed farmers. The measurement and analysis of the perception of farmers on the characteristics of the innovation offered by the partners to the seed farmer was done by using Likert Scale with indicator innovation characteristics include (1) advantage relative, (2) the level of compatibility, (3) the level of complexity, (4) can be tried and (5) can be observed and interpreted further in the discussion. The role of the partners in the implementation of agricultural extension was analyzed based on indicators (1) material conformity, (2) suitability extension method (3) the accuracy of the using media and (4) extension intensity conducted by the partners that subsequently interpreted in the discussion.

According to Riduwan [7] and Nazir M [5] criteria for the interpretation of the Likert Score namely:

1. Score 0% -19% = very insignificant

2. The figure is 20% - 39.99% = insignificant

3. The figure is 40% - 59.99% = quite significant

4. The figure is 60% - 79.99% = significant

5. The figure is 80% - 100% = very significant

3. Results and Discussion

The results of research on the farmers' perception on innovation characteristics especially on cultivated technologies for varieties IPB 3S was in agree category. It showed that the usefulness of the innovation provided by the partners was perceived by the target audience.

Table 1: Index Values of Farmers Perceptions on Innovation Characteristics

N	Innovation Characteristics	Index (%)	Interpretation
1	Relative advantage	82.36	Strongly agree
2	Level of Compatibility	78.37	Agree
3	Level of Complexity	72.37	Agree
4	Triability	80.66	Strongly agree
5	Observability	76.32	Agree
	Mean	78.02	Agree

Sources: Primary data analysis, 2016

Table 1 showed the seed farmer IPB 3S believed that the application of technology implemented by the partners had a relative advantage compared with the innovations implemented so far by the farmers in seed multiplication activities. Seed farmers also argued that the innovation given by the partners was very easy to be tried on a small scale. It was in accordance with Agussabti [1] who believe that innovation which can be tried on a small scale more quickly accepted by farmers than innovation which can not be tried first.

Further, the characteristics suitability and can be observed were in agree category where innovation given did not contradict with the experience and the values espoused by the seed farmer. According to Hajrial [2], the complexity of the innovation was slightly felt by farmer in both in the application of technology IPB 3S such as planting pattern Legowo row type 3: 1 as well as the time and volume of fertilization. At the optimum production technology IPB 3S varieties, organic fertilizer was recommended relatively larger than usually done by the farmer over the years. The condition was not a significant issue in which farmers argued although initially there was little perceived complexity of the innovation provided by the partners, but it was covered by production output that higher than the previous technology implemented.

This research also described farmers' peception on the role of the patners in the implementation of agricultural extension in rice seed farmer in the Privince of Aceh. It included the role of goverment, university, private organizations and farmers institution. The description of their perception were shown at Table 2.

Table 2: Index Value of Farmers' Perceptions on the Role of Partners in Agricultural Extension

N	Innovation Characteristics	Index (%)	Interpretation
1	Government	84.36	Very significant
2	University	83.32	Very significant
3	The Private Organizations	54.63	Quite significant
4	Farmers Institution	78.66	Significant
	Mean	75.24	Significant

Sources: Primary data analysis, 2016

Table 2 showed that the farmers perceived the role of government through the role of counselors at Counseling Agency and Food and Agricultural Extension Centres at subdistrict level was important in agricultural extension activities in the form of training and mentoring as well as the distribution of the means of production in order to support the rice seed at the research location. Distributed production facilities which were felt very important by the farmers from the governments' role includeed availability of improved seed and organic fertilizers in the application of technology of cultivation of varieties IPB 3S.

University role (IPB and Unsyiah) was also considered very significant in breeding to ensure the application of innovation through appropriate training activities phase of the cultivation and processing of crops to be used as certificated seed. The university also put professionals research students (doctoral, magister and bachelor degree) to oversee and monitor the implementation of land manufacture innovation, Legowo row planting

patterns, balanced fertilizer, pest control and harvesting implementation and management to produce superior seed.

For the role of private organizations, farmers perceived in the category quite significant. This was due to the lack of private organizations' role expected by farmers in supporting the availability fund and the certainty of the seeds price that farmers produce. However, through the cooperation with the private organizations, farmers received added value slightly higher than the price other varieties cultivated not intended to produce quality seeds. In the research location, the difference price obtained by seed farmers who paid by the private organizations was IDR. 500 / kg higher than grain farming which was not to be used as seed rice.

Farmers Institution include farmer groups, the Combination of Farmers Group (Gapoktan) and the Institute of Indigenous *"Keujruen Blang"* conducted the study and contributet to the activities of rice seed. Farmers perceived that farmer institutions had the role in organizing and arranging farmers, ensuring equal distribution of water supply as well as the implementation of the custom activities which were still used in the lives of rice farming communities in the province of Aceh. The role of the farmers institution was very necessary to strengthen to optimize the institution in encouraging farming activities.

The results of this study were supported by Swanson, B.E., and M.M. Samy [10] and Zulvera, Sumardjo. Slamet Margono, Basita Ginting [11] who said that the partnership of various parties; governments, NGOs, research institutions and private organizations will encourage farmers' agricultural extension activities in adopting innovations offered.

Aside from the characteristics of innovation and the role of partners, this research also got an overview of the role of the partners in the implementation of the extension to seed farmers varieties IPB 3S that covers; the suitability of the material extension, extension methods, the use of media accuracy and intensity of extension. Results of index farmer's perception of the role of the partners in the implementation of the extension can be seen in table 3 below;

Table 3: Index Value of Farmers Perception on Partners Role in Implementing Extension

N	Role of Partners in Agricultural Extension Execution	Index (%)	Interpretation
1	Extension Material	82.71	Very Appropriate
2	Extension Method	63.37	Appropriate
3	Appropriate use of media	78.37	Appropriate
4	The intensity of the implementation of the extension	80.66	Very Appropriate
	Mean	76.28	Appropriate

Sources: Primary data analysis, 2016

Seed farmer argued that extension materials delivered by the partners were appropriate to their needs. The material was given in stages in accordance with the process of cultivation and farming needs that did the farmers

began to raise awareness of the business, the business motivation, stages of cultivation, harvest management, marketing and the strengthening of the group. Materials provided by the extension from the agency for agricultural extension and food security of North Aceh Regency as well as from the source of innovation in University (IPB and Unsyiah) also contributed to provide training and extension materials through guidance in the application of cultivation technology innovation and development of rice seed farming. The same condition was also felt by farmers related to the intensity of agricultural extension. Usually the extension was only done by the government, but through the partnership, the extension was also provided by the university ranging from program socialization, program implementation and evaluation of the partnership implementation. Seed farmer argued that extension method used began with lectures, demonstrations of ways, visit exercise was usefull for them, however variety of extension methods have not been effective in resolving all cultivation technical issues. The method which directly provided tangible proof of cultivation technology such as plots demonstration and visit to a rice seed treatment was felt important to add in variety of using extension method and able to provide effective absorption of innovation and information by the farmers. This was in line with Sapar at all [9] who believe that successful extension should be capable in designing materials and methods in accordance with the needs, conditions and characteristics of farmers. In that case, the material of leadership, technology dissemination and mastery of the technical areas should be controlled by extension organizer. The accuracy of using media was in final sequence in the farmers' perception of the role of the partners. In fact, various media can be used to deliver information and technology for seed farmers. The media could be print media, audio media, audio-visual media, media in the form of physical objects or real objects. Any media that was used, in principle, should be able to improve the effectiveness and the study process, especially in clarifying the material being studied in order to accelerate the behavior changes (knowledge, skills, and attitudes) among the target group. Seed farmers felt that the extension done by the partners was still dominated by print and audio visual media and had not optimally combine various types of media to support the implementation of the extension.

4. Conclusion

The perception of seed farmers on the characteristics of cultivation innovation of varieties IPB 3S carried out by the extension partners were sequentially (1) have a level of relative advantage, (2) easy to try, (3) the level of compatibility, (4) can be observed, and (5) the level of complexity of innovation. The farmers also perceived that the role of partners in agricultural extension was very significant. The higher role was given by govermen and the lowest one came from the entrepreneurs. The role of partners both agricultural extension from the government or from the universities to seed farmers varieties of rice IPB 3S in order were (1) the suitability of extension materials, (2) the intensity of extension, (3) the suitability of the method of extension and (4) the accuracy of using media.

5. Recommendation

It becomes very necessary for any parties involved in extension activities to facilitate the implementation of innovation. The use of various media in extension activities are better to improve behavior changes (knowledge, skills, and attitudes) in the application of good technology. The use of demonstration plot (plots) that are directly observable and visiting to institutions or success farmers is also a consideration. The use of different types of media such as audio media, audio-visual media and media in the form of physical objects or real objects also

should be applied at every stage of the extension implementation. Besides, it is very esssential to strengthen farmers institution and to optimize the role of private organizations in supporting farming activities at farmers' level.

Acknowledgements

The researcher would like to give the deepest gratitude to the agency of Bogor Agriculture Institute (IPB), Syiah Kuala University (Unsyiah), The Goverment of North Aceh and seed farmers at "SapuePakat" Group in North Aceh.

References

[1] Agussabti. "Kemandirian Petani Dalam Pengambilan Keputusan Adopsi Inovasi (Kasus Petani Sayuran Di Provinsi Jawa Barat." Doctoral Disertation, Post Graduate of IPB. Bogor, 2002.

[2] Hajrial A. "Tehnologi Produksi Optimum (IPB-Prima) Padi Varietas IPB 3S, Rekomendasi Teknologi Budidaya." Materi Pelatihan untuk Petani Penangkar Benih. Departemen Agronomi dan Hortikurtura. IPB. Bogor, 2015

[3] Indraningsih K.S., B.G. Sugihen., P. Tjiptopranoto., P.S. Ansgari. "Performance of Extension Workers From Famers Perspective and the Existence Of Self- Support Extension." Journal of Extension, vol. 8.pp. 304-321. 2010.

[4] Mosher, A.T. Getting Agriculture Moving: Essentials for Development and Modernization. New York: Frederick A. Preiger. 1966.

[5] Nazir, M. Metode Penelitian, seventh edition. Jakarta: Ghalia Indonesia. 2011.

[6] Ojha, G.P. and S.R. Morin. Partnership in Agricultural Extension. "Lessons from Chitwan (Nepal). Agricultural Research and Extension Network." Overseas Development Institute, London. Network Paper No. 114, July 2001.

[7] Riduwan. Skala Pengukuran Variabel-Variabel Penelitian. Bandung: Alfabeta. 2003

[8] Rogers. E. M and F. Shomaker. Difusion of Innovation, third edition. New York: The Free Press : A. Division Of Macmilian. Publishing. 1983.

[9] Sapar., Amri J., Pang S. A., Amiruddin., I. G Putu P. "The Performance Agricultural Extension Workers and their Impact at Competence Cacao Farmers in four District South Sulawesi". Journal Extension. Vol. 8, No. 1. 2012

[10] Swanson, B.E., and M.M. Samy. "Developing an extension partership among public, private and non govermental organizations". Journal of International Agricultural Education. Vol 9.pp. 5-10, 2002.

[11] Zulvera, Sumardjo. Slamet Margono, Basita Ginting. "Factors Influencing the Adoption of the Organic Vegetable Farming System in Agam and Tanah Datar District of West Sumatra". International Journal of Sciences: Basic and Applied Research (IJSBAR), vol.26, pp 425-432, 2016.